

## Claims

1. A dye-sensitized solar cell comprising a transparent substrate, a transparent electrically-conductive membrane formed on the surface of the transparent substrate and an electrically-conductive substrate disposed opposed to the transparent electrically-conductive membrane, wherein a porous semiconductor layer having a dye adsorbed thereto and an electrolyte are provided interposed between the aforesaid transparent electrically-conductive membrane and the aforesaid electrically-conductive substrate,

characterized in that the aforesaid electrolyte comprises a molten salt incorporated in a network structure obtained by crosslinking at least one kind of Compound A having isocyanate group with at least one kind of Compound B having amino group.

2. The dye-sensitized solar cell as described in Claim 1, wherein at least one of Compound A and Compound B constituting the aforesaid electrolyte has a polymer structure having a molecular weight of from 500 to 100,000.

3. The dye-sensitized solar cell as described in Claim 2, wherein a part or whole of the polymer structure of the aforesaid Compound A and Compound B comprises one or more selected from the group consisting of polyether, polyester, polycaprolactone, polysiloxane, polyolefin, polybutadiene,

polyisoprene, polycarbonate and polyphosphazene.

4. A dye-sensitized solar cell comprising a transparent substrate, a transparent electrically-conductive membrane formed on the surface of the transparent substrate and an electrically-conductive substrate disposed opposed to the transparent electrically-conductive membrane, wherein a porous semiconductor layer having a dye adsorbed thereto and an electrolyte are provided interposed between the aforesaid transparent electrically-conductive membrane and the aforesaid electrically-conductive substrate,

characterized in that the aforesaid electrolyte comprises a molten salt incorporated in a network structure obtained by crosslinking at least one kind of Compound A having isocyanate group with at least one kind of Compound C having carboxyl group and/or hydroxyl group,

at least one of Compound A and Compound C constituting the aforesaid electrolyte has a polymer structure having a molecular weight of from 500 to 100,000 and a part or whole of the polymer structure comprises one or more selected from the group consisting of polyether, polyester, polycaprolactone, polysiloxane, polyvinylpyrrolidone, polycarbonate and polyphosphazene.

5. The dye-sensitized solar cell as described in any one of Claims 1 to 4, wherein the aforesaid molten salt is a salt having a melting point of lower than room temperature and/or

a salt which stays liquid at room temperature.

6. The dye-sensitized solar cell as described in any one of Claims 1 to 5, wherein the aforesaid molten salt takes part in the production of an oxidation-reduction pair.

7. The dye-sensitized solar cell as described in any one of Claims 1 to 6, wherein the aforesaid molten salt has a cationic structure containing quaternary nitrogen and/or tertiary sulfur.

8. The dye-sensitized solar cell as described in Claim 7, wherein the aforesaid molten salt has one or more selected from the group consisting of ammonium, sulfonium, heterocyclic compound and derivatives thereof as cation.

9. The dye-sensitized solar cell as described in Claim 8, wherein the aforesaid heterocyclic compound is pyridinium, imidazolium, piperidinium or pyrazolium.

10. The dye-sensitized solar cell as described in any one of Claims 1 to 9, wherein the aforesaid molten salt has an iodide ion as anion.